2010

Loyalty of Web 2.0 Sites: The Role of Sense of Belonging

Yi Maggie Guo
University of Michigan – Dearborn, magyiguo@umich.edu

Chung-Tzer Liu
Soochow University, kevinl@scu.edu.tw

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Yi Maggie Guo, Department of Management Studies, University of Michigan – Dearborn, Dearborn, MI, USA, magyiguo@umich.edu

Chung-Tzer Liu, Department of Business Administration, Soochow University, Taipei, Taiwan 100, R.O.C., kevinl@scu.edu.tw

Abstract

The research investigates the factors leading to user loyalty of Web 2.0 sites. Survey of users in a popular Web 2.0 site in Taiwan was conducted. Results show that sense of belonging and service quality have direct effect while trust affects loyalty indirectly via sense of belonging. In addition, service quality also affects loyalty through trust and sense of belonging. One surprising finding is that trust has non-significant direct effect on loyalty as originally proposed. Another interesting finding comes from light user group. Among light users, service quality has no direct effect on loyalty, making sense of belonging the only direct impact on loyalty.

Keywords: Loyalty, Sense of Belonging, Web 2.0

1 INTRODUCTION

Although it is hard to define "Web 2.0" in one sentence, it can be understood by looking at some examples and by contrasting it to old Web 1.0 technologies. Rather than passively reading and waiting for content provided by websites the old way (Web 1.0), millions of users interact and actively contribute content by self publication (e.g., blogs), sharing (e.g., youTube for videos and Flicker for pictures), discussion (e.g., Internet forums) and collaboration (e.g., wikis), social networking and community (e.g., facebook.com, linked.com, and ning.com) (O'Reilly 2005; Clarke 2008). Web 2.0 is user-centered and provides a richer user experience by embedding pictures, videos, maps and so on in web pages. Web 2.0 also allows self-service (e.g., Google Adsense) and empowers users (e.g., Digg). "Web2.0" is not one particular technological upgrade or one type of web site. The so called "collective intelligence" by high level of user participation is made possible by an array of technologies using web as platform and software as a service. Nevertheless, a typical Web 2.0 site provides members the ability to post articles, share pictures and videos, participate in discussions, leave messages, and meet and connect to friends online, or a combination of services of these.

Compared to traditional website, the challenge facing Web 2.0 website is not only providing useful information and quality service, but also create a communal sense among members. In this study, we try to understand factors that lead to customer loyalty for Web 2.0 sites.

2 RESEARCH FRAMEWORK

2.1 Customer Loyalty and e-Loyalty

Loyalty is a deep commitment to a brand or a service provider (Oliver 1999). By going through cognitive, affective, conative and action phases, customers develop a strong attachment to a brand or service provider and are not easily allured away by competitors. While cognitive/affective loyalty is similar to behavioral loyalty focusing on the repatronizing behavior, conative/action loyalty is similar to attitudinal loyalty and represents a higher level and long term commitment to the provider (Dick & Basu 1994; Shankar et al. 2003). At this level, customer loyalty entails customer intention to future business and recommendation (Zeithaml et al. 1996).

Customer loyalty is as important to online businesses as for brick-and-mortar business, if not more important, since competitors can be reached by just one simple mouse click (Anderson & Srinivasan 2003; Gefen 2002). Web2.0 sites provide a platform and space for members to participate in sharing and collaboration, let it be their thoughts, opinion, experience, photos, videos, and much more online. In this sense a Web 2.0 site is a service provider and needs address the issue of customer loyalty as well. For most Web 2.0 sites like youTube, facebook.com, and bloger.com, membership (at least basic level) is free and no monetary transactions take place between the site and members. However, members' continued use is critical to the survival and success of such site, either by attracting sponsorship and/or advertisement. Thus, our model focuses on conative/action loyalty in the context of Web 2.0 sites, which is the members' commitment to continued use and recommendations to others.

2.2 Sense of Belonging

Mainly, active participation of members during information exchange makes a Web 2.0 site different from a traditional website (Clarke 2008). Members start a conversation or discussion or a group or a network either by posting articles, questions, videos, pictures, invitation, and so on and so forth, rather than passively receiving information from website,. Others can join in by commenting and reply. Web 2.0 sites also provide features to facilitate private communication in addition to public ones. Only feeling comfortable with the site and its culture can members start contributing. Active member involvement is the key for a Web 2.0 site's success, making cultivating members' sense of belong a necessity (Lin 2008). Community identification is defined as the perception of belonging to a community. It is found to positively affect knowledge sharing intentions (Hsu & Lin 2008) and

behavior (Chiu et al. 2006) online communities. Thus, we posit:

H1. Users' sense of belonging will positively affect their loyalty to the website.

2.3 Trust and e-Trust

Another often studied factor leading to e-loyalty is trust. Trust is a multidimensional constructs and various types of trust exist (Tan & Sutherland 2004; Hsu et al. 2007). Trust formation is a dynamic process going through different stage of any relationship. Despite of the complexity of the trust concept, the finding that trust is an important leading factor to customer loyalty is quite consistent in e-service and e-commerce contexts (e.g., Gefen 2002; Luarn & Lin 2003; Flavian et al. 2006). In a professional virtual community, trust, including economy-based trust, information-based trust, and identification-based trust, is related to knowledge sharing behavior (Hsu el al. 2007). In this research, we take the holistic view of trust in that we are interested in the users' overall feeling of trustworthiness of the site. Thus, we posit the following hypothesis:

H2. Customer trust will positively affect loyalty.

Online communities lack face-to-face interaction among community members. Trustworthiness of a Web 2.0 site is crucial for the success and sustainability since it provides its members an expectation of successful operation and reduces uncertainty stemmed from more dynamic nature of Web 2.0 sites. User trust will foster a sense of belonging. It is found that trust has a positive impact on members' sense of belonging in online communities (Lin 2008). We test the following hypothesis:

H3. Customer trust will positively affect sense of belonging.

2.4 Service Quality

Web 2.0 sites are service providers in that they provide a platform so that users can contribute, share, interact, publish, collaborate, and more. Service quality is the overall user assessment for service delivery. How effective and efficient a site is in meeting users' needs affects user assessment and perception. Positive relationship between service quality and trust has been established in prior research in electronic commerce (Gefen 2002; Kim et al. 2004). It is a fairly new approach to relate service quality to sense of belonging in online communities. Nonetheless, the prediction is only logical. Service quality reflects how the site treats its users. A reliable and caring site provider sends out the signal of hospitality, making users "feel at home." It fosters a sense of belonging in its members. In regard of the impact of service quality on customer loyalty, the relationship has long been confirmed in both traditional and electronic commerce. For Web 2.0 sites, service quality should still be an important factor to loyalty among their members. No user will remain loyal to a lousy web site, especially in an environment with abundant alternatives and little switching barriers.

We test following hypotheses:

H4. Service quality will positively affect trust.

H5. Service quality will positively affect sense of belonging.

H6. Service quality will positively affect loyalty.

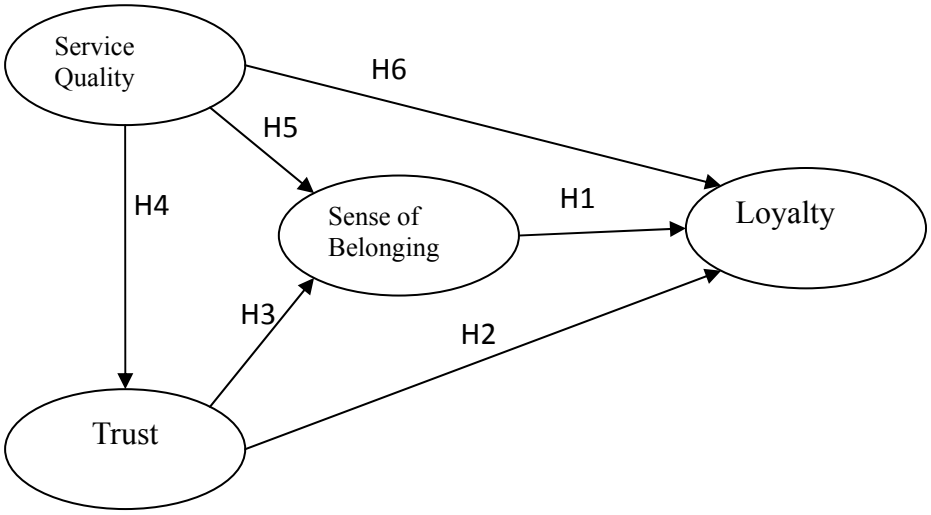


Figure 1. Research Framework

3 RESEARCH METHODOLOGY

To test the proposed research model as shown in Figure 1, a survey research methodology was used. In this section, details of questionnaire design and distribution procedures are reported.

3.1 Questionnaire Design

Validated items from prior research were the basis for measures of the various constructs. Measures for Service Quality consisted of six items based on Ahn et al (2007). Trust was measured by a three-item scale adapted from Hsieh and Hiang (2004). Measures for Loyalty consisted of five items adapted from Zeithaml et al. (1996). Sense of Belonging was measured by items based on Lin (2008). All items were constructed using a 5-point Likert-Scale ranging from strongly disagree to strongly agree (1=strongly disagree; 5=strongly agree). The measurement items used in this study are listed in Table 1.

Construct	Item	Loading	t-value
Service Quality	Mean = 3.15, Cronbach's alpha = .84, AVE = .56		
1	Anticipates and responds promptly to user needs and request	.70	13.16
2	Can be depended on to provide whatever is promised	.73	14.31
3	Instills confidence in users, reducing their uncertainty	.77	15.49
4	Understands and adapts to the user's specific needs	.77	15.38
5	Provides follow-up service to users	.72	13.94
6	Gives a professional and competence image	.80	16.12
Trust	Mean = 3.05, Cronbach's alpha = .84, AVE = .72		
1	The site can be relied upon to keep promises.	.85	17.78
2	The site is trustworthy.	.93	20.39
3	I have full confidence in the site	.76	15.20
Loyalty	Mean = 3.31, Cronbach's alpha = .84, AVE = .64		
1	I will say positive things about the site to other people.	.75	14.82
2	I will recommend the site to someone who seeks my advice.	.83	17.51
3	I will encourage relatives and friends to use the site.	.89	19.48
4	I will consider the site my first choice of social media	.78	15.96

Construct	Item	Loading	t-value
	website.		
5	I will stop use this site (reverse).	.74	14.66
Sense of Belonging	Mean = 3.21, Cronbach's alpha = .84, AVE = .56		
1	I feel a strong sense of belonging to the site.	.83	16.95
2	I enjoy being a member of the site.	.85	17.84
4	I am very committed to the site.	.65	12.25
3	Overall, the site has a high level of morale.	.64	12.02

Table 1. Measurement Properties

3.2 Sampling and Respondent Profile

Users of a popular Web 2.0 site in Taiwan were solicited to take the web-based survey. The site (http://www.wretch.cc) is the largest social media website in Taiwan. It provides blogging, sharing of photos and videos, and other features to members. A convenient sample was used. 309 users filled out the survey. Six of them did not have the experience of using the site and were excluded from data analysis. So the sample size was 303. No differences were found in responses to key constructs (Service Quality, Trust, Sense of Belonging, and Loyalty) in terms of individual characteristics (gender, education level, age, and profession). Table 2 shows the demographics of the respondents.

Demographic variables	Category	Sample	Percentage
Gender	Male	146	48.1
	Female	157	51.8
Education Level	High school and below	8	2.64
	College & Associate degree	164	54.1
	Graduate school and above	131	43.2
Age	<=19	15	4.95
	20-29	274	90.4
	30-39	14	4.62
	>=40	0	
Profession	Student	208	68.6
	Services	18	5.94
	Manufacture	16	5.28
	Business	17	5.61
	Military, Government, Education	10	3.30
	Freelancing	8	2.64
	Other	28	8.58

Table 2. Demographics of Respondents

A typical user of the site is a young, college student. The most used features of the site are browsing blogs (31.7%) and photo albums of others (32.1%). Other often used features include uploading photos (12.5%), blogging (15.9%), and watching videos (5.39%). Based on number of hours spent online each day, 102 are relatively light users (1-3 hours) while 201 are heavy users. Among them 79 spend 3 to 5 hours and 122 five hours or more online everyday.

4 DATA ANALYSIS AND RESULTS

In investigating the proposed relationships among key constructs, which involve complex mediating effects, structural equation modeling (SEM) was used since it is better suited for analyzing the intricate causal networks (Gefen et al. 2000). A two-phase approach was utilized (Anderson & Gerbing 1988). First, measures were examined in terms of reliability and construct validity. Second, the structural model expressing our hypothesized research model with directional paths was estimated.

In testing our research model, we also contrasted two rival models. Both the measurement and the structural models were estimated by software SPSS 12.0 and LISREL 8.51.

4.1 Measurement Model

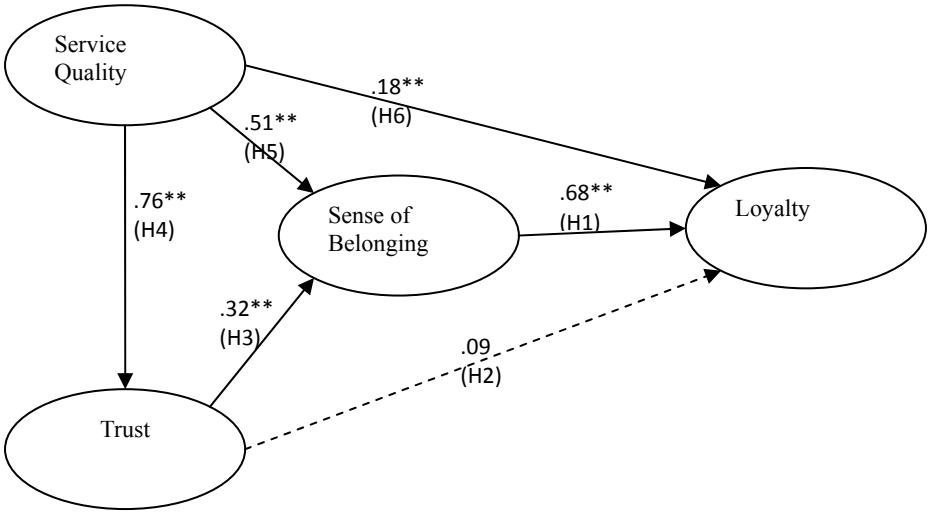
To test construct validity we conducted a confirmatory factor analysis of the measurement model using collected data. To assess model fit, we first examined three absolute fit indices. The ratio of χ^2 to the degree of freedom (df) was adopted in light of the sensitivity of χ^2 to sample size. The value of 2.50 (χ^2=322.03, df=129) in this study showed a good fit of the data because a ratio between 2 and 5 indicates a reasonable fit (Bentler 1988; Marsh & Hocevar 1985). Two other absolute fit indices are Goodness-of-Fit Index (GFI) and Root Mean Square Error of Approximation (RMSEA). GFI should be greater than .80 (.89 in this study) (Etezadi-Amoli & Farhoomand, 1996) and RMSEA should be below .10 (.07 in this study) (Browne & Cudeck 1993). We also looked at comparative fit indices, including Non-Normed Fit Index (NNFI) and Comparative Fit Index (CFI). A well fitted model should have a NNFI greater than .90 (.98 in this study) and CFI greater than .90 (.98 in this study) (Bentler 1988; Hayduk 1987). Based on these criteria, the goodness of fit measures of this model was satisfactory.

Measurement properties are listed in Table 1. The Cronbach's alpha of the key constructs range from .84 to .89; all are above the acceptable level of reliability of 0.7 (Nunnally & Bernstein 1994). To assure convergent validity, all factor loadings of items should be significant (t value should be greater than 1.96). In this study, the t values range from 12.02 to 20.39, significant at $p<.001$ level. Standardized item loadings should exceed the value of .60 to establish convergent validity (Bagozzi & Yi 1988). All item loadings are above .60. In addition, the average variance extracted (AVE) estimates should be greater than 0.5 (Fornell & Larcker 1981). In this study AVE range from .56 to .72.

Furthermore, discriminant validity of measures was assessed by examining by performing confirmatory factor analysis on a series of constrained models. A constrained model is based on a measurement model with the correlation between a selected pair of constructs being fixed at one. The minimum difference of χ^2 between the constrained models and the unconstrained model (the original model) was 94.71, greater than $\chi^2_{(0.999,1)} = 10.83$. This shows the evidence of discriminant validity.

4.2 Structural Model

Figure 2 shows the estimation of parameters pertaining to our proposed research model. The model performance statistics indicate that the hypothesized model had a good fit. Figure 2 shows path coefficients. All except one are significant at $p<.01$ level. Thus, all but H2 are supported. The model explains 78% of the variance in Loyalty. Service Quality and Trust account for 60% of the variance in Sense of Belonging. Service Quality accounts for 57% of the variance in Trust.



**: significant at p<.01 level, dashed line: non-significant paths

Figure 2. Structural Model

Among the respondents, 102 are relatively light Internet users while 201 are heavy users spending over 3 hours online each day. We compared the two groups by separating the sample into two based on number of hours online. Separate structural models were run on the two data sets. Table 3 shows the results along the result from pooled data. The model for light users has lesser fit, which may be due to the relatively small sample size. For light users, H2 and H6 are not significant. For heavy users, H2 is not significant.

	ALL (n=303)	**Light Users (n=102)**	**Heavy Users (n=201)**
H1: Sense of Belonging -> Loyalty	.68 supported	.85 supported	.59 supported
H2: Trust -> Loyalty	.09 not	.04 not	.11 not
H3: Trust -> Sense of Belonging	.32 supported	.39 supported	.28 supported
H4: Service Quality-> Trust	.76 supported	.72 supported	.77 supported
H5: Service Quality-> Sense of Belonging	.51 supported	.41 supported	.55 supported
H6: Service Quality -> Loyalty	.18 supported	.1 not	.21 supported
Model fitness	χ^2/df= 2.50, GFI=.89, CFI=.98, NNFI=.98, RMSEA=.07	χ^2/df=2.04, GFI=.78, CFI=.96, NNFI=.95, RMSEA=.1	χ^2/df=2.05, GFI=.87, CFI=.98, NNFI=.98, RMSEA=.07

Table 3. Light Users vs. Heavy Users

5 DISCUSSION & CONCLUSION

In this paper we reported a study that investigates factors leading to user loyalty to Web 2.0 sites. Sense of belonging and service quality have direct effect while trust affects loyalty indirectly via sense of belonging. In addition, service quality also affects loyalty through trust and sense of belonging. One surprising finding is that trust has non-significant direct effect on loyalty as originally proposed. Another interesting finding comes from light user group. Among light users, service quality has no direct effect on loyalty, making sense of belonging the only direct impact on loyalty.

As a service provider, Web 2.0 sites need loyal users for continued success. Factors contribute to user loyalty definitely are of importance. In our study, factors related to customer loyalty in other context still play important role. Service quality has both direct and indirect effect on loyalty while trust has an indirect effect.

The central role played by sense of belonging is evidently clear as shown by our results. It is the

mediating factor between service quality, trust, and loyalty. In prior studies, there is a strong tie between trust and loyalty. In our study, the relationship is fully mediated by sense of belonging. Sense of belonging embodies the special needs of users in an environment in which participation is vulnerary. Practitioners should pay special attention to factors that fosters the sense of belonging. Providing high quality of service to and building trust among members are two ways, as demonstrated by our studies.

Different users have different needs. As shown in our study, among light users sense of belonging is the sole direct effect on loyalty, which suggests that light users will continue using a Web 2.0 once they "feel at home." On the other hand, for heavy users they still consider service quality independently from their sense of belonging in their commitment decision process. It suggests that different approaches are needed to retain light and heavy users. Although high service quality is important in general, for light users, to establish sense of belonging is a must. Services targeting sense of belonging can be deployed to retain light users. However for heavy users, requirements for service quality are even higher.

The current study only includes two factors that affect sense of belonging. Other factors can be included in future research, such as a responsive, constructive norm of a Web 2.0 site.

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